

ABSTRACT OF THE DISCLOSURE

Surface plasmon resonance (SPR) sensors comprise a sensor chip constructed of laterally integrated arrays of planar sensor chip units and an optical transducer constructed of laterally integrated arrays of planar optical transducer units. The replaceable sensor chip is separated from the optical transducer by a gap and perpendicular optical interconnections are between the sensor chip and the optical transducer. The optical interconnections between the sensor chip and the optical transducer are based on collimated light beams incident perpendicularly to the interfaces. Uncritical alignment of the optical transducer and the sensor chip is provided. The direction of the light beams will not be changed when passing through the interfaces between the sensor chip, the gap and the optical transducer eliminating the need of disposing refractive index matching gels in the gap.